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ABSTRACT

The purpose of this study was to identify and define the psychosocial factors that affect a student's ability to become socially integrated in college. In specific terms, the study explored the relationship and impact of precollege psychosocial factors in the context of current models of academic persistence. Participants were 151 first-time freshmen, volunteers from a small, special purpose undergraduate institution. These students completed a precollege survey and a first-year experience survey in the late spring or summer following the freshman year. Six precollege psychosocial constructs were hypothesized to affect a student's ability to become integrated in college and his or her subsequent decision to remain enrolled or withdraw. Factor analyses supported these constructs. Results indicate that skills and attitudes developed prior to enrollment in higher education have an impact on a student's transition to the college environment and the decision to remain enrolled in college. The results suggest four major areas for intervention by higher education institutions: mentoring services, faculty and staff development, student activities and residence hall programming, and counseling initiatives. (Contains 1 figure, 4 tables, and 70 references.) (SLD)

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PRE-COLLEGE PSYCHOSOCIAL FACTORS RELATED TO PERSISTENCE

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College persistence constitutes one of the most important criteria by which success in higher education is judged both for the institution and the student. For the individual, student persistence is critical in attainment of a college degree, which has a significant influence on subsequent economic and occupational attainment for all students (Pascarella & Terrenzini, 1991). For the institution, student persistence is a performance measure as well as a means of economic survival. Since the early 1950s, a wealth of persistence literature has been published (e.g. Tinto, 1975, 1987; Bean, 1982, 1983, 1985, 1990; Cabrera, Castaneda, Nora, & Hengstler, 1992; Nora & Cabrera, 1996). Even in abundance, there still remain existing dimensions in the theoretical frameworks that are relatively unexplored.

Persistence models have often included the notion that pre-college academic ability has a direct influence on college academic achievement and, therefore, indirectly on persistence decisions (Pascarella & Terenzini, 1980; Nora & Cabrera, 1996; Nora, Castaneda, & Cabrera, 1992). For example, secondary coursework, grade point averages, class ranks, and entrance examinations such as the Scholastic Aptitude Test (SAT) and the American College Test (ACT) have been researched as indicative of such pre-college academic abilities (e.g. Tinto, 1975, 1987, 1988; Pascarella & Terenzini, 1980; Nora & Cabrera, 1996; Nora, Castaneda, & Cabrera, 1992; Bean, 1983, 1990). Studies have also included extrinsic pre-college characteristics or factors such as work experience and family educational level that students bring with them to college, which have also been found to be influential in determining the likelihood of persisting to the second year in

college (Nora, Cabrera, Hagedorn, & Pascarella, 1996). Although social integration has been identified as a strong predictor of college persistence, persistence theory has little reference to the pre-college characteristics that allow students to become involved on a social level. Many of the models include pre-college academic abilities and demographic variables; however, few encompass measures of pre-college social constructs such as self-efficacy, anticipation attitudes, intimacy motivation, introversion, extroversion, leadership, involvements, friendship support, parental support, and explanatory styles. Most persistence theories (e.g. Tinto, 1975; Bean, 1990, Nora and associates, 1996, 2000) include constructs which convey the significant impact of a student's socialization to the campus in the persistence process yet none of the models explore the pre-college psychosocial factors that might impact a student's ability to become involved. The purpose of the proposed study is to identify and define psychosocial factors that affect a student's ability to become socially integrated into college. More specifically, this study explored the relationship and impact of pre-college psychosocial factors within the context of current persistence models.

Conceptual Framework and Literature Review

Researchers have predominately used Tinto's (1975, 1987) *student integration model* as a platform to replicate and test persistence theory. Although with some mixed results, under given constraints the model has been validated and demonstrated predictive value (Pascarella & Terenzini, 1983). Within the model, Tinto (1975) explores pre-college characteristics described as family background, individual attributes, and pre-college schooling. The construct of family background refers to the parents' education level, socio-economic status, and community of residence. Individual attributes are

considered to be sex, race, ethnicity, and ability as well as the level of motivation and expectations to obtain a college degree. Pre-college schooling includes high school academic experiences.

While the model supports the significance of pre-college characteristics, it has not included personal, socio-psycho characteristics or past social experiences that might impact a student's ability to become involved. Tinto's (1993) premise that a student must be integrated within both social and academic domains suggests that there is further need to explore pre-college psychosocial abilities in addition to the pre-college academic variables already addressed.

The Link Between Academic and Social Integration, Persistence, and Pre-College Psychosocial Factors

Within current persistence theory, social integration is primarily a function of the degree of involvement on a social level. Successful encounters in these areas result in varying degrees of social communication, friendship support, faculty support, and collective affiliation, each of which can be viewed as important social rewards that become part of the person's generalized evaluations of the cost and benefits of college attendance and that modify his or her educational commitments (Tinto, 1975). Other things being equal, social integration should increase the likelihood that the student will remain in college (Tinto, 1975). Social integration, as it pertains to persistence in college, seems not to imply a wide-ranging congruence with the prevailing social climate of the institution as much as it does the development through friendship associations, of sufficient congruency with some part of the social system. Students may perceive themselves as satisfied with their social integration if significant friendships have developed within a sub-culture of the institution.

Moreover, while persistence models (Tinto, 1975, 1987; 1988; Bean, 1983, 1985; Nora & Cabrera, 1996) encompass interactions with faculty in the social domain, Tinto (1987) clearly suggests that such interactions may also enhance academic integration. Pascarella and Terenzini (1980) noted that for women, academic integration had a stronger direct effect on voluntary freshman withdrawal decisions. A rather substantial body of research on college impact suggests that students' interactions with the college environment are not independent of the particular background characteristics that they bring to college (Astin, 1964; Centra & Rock, 1969; Pascarella & Terrenzini, 1980; Stage, 1989).

The involvement process may be different for different students and vary according to the student's social, family, and educational background, personality, educational aspirations, external responsibilities, and the type of institution chosen (Terenzini et al., 1994). Students characterized as traditional age, generally white, whose parents or family members attended higher education suggested college was the next logical step, an expectation more than a choice. Being accepted to the university establishes the idea that they belong at least academically (Terenzini et al., 1994). While these students occasionally express some concern about their ability to meet academic competition, making new friends dominates their conversations. For them, the most threatening disjunction is interpersonal, not academic. Making friends is commonly cited as being the key to "feeling connected" or "a part" of their institution (Terenzini et al., 1994). For these students the integration process stems from acceptance by their peers. Yet, the influence of pre-college experiences and perceptions such as fears related to how well students anticipate that they will perform academically in college, the ability to form

new relationships and friendships, and self-efficacy, academically-related beliefs developed during high school that enable first-year college students to create social structures and engage in academic endeavors, is relatively un-established.

During the transition from high school to college, students can experience a wide range of emotions from excitement to apprehension to fear. For residential institutions, it can mean cutting loose from past social networks and establishing identities (Pascarella & Terrenzini, 1991). Identities must be clarified, interpersonal networks must be constructed and new academic and social structures, attitudes, values, and behaviors must be learned. While students are clarifying identities, they are also strongly linked to their past relationships and cultures (Schmidt & Hunt, 1994). Previous research has already noted differences in race, gender, and parental level of education. However, more intrinsic qualities may have a greater effect than those extrinsic variables previously studied. These prior attitudes, characteristics, and behaviors are directly linked to college behaviors and social integration, and therefore indirectly to persistence.

Precollege Characteristics

How students anticipate their new environment will affect what coping strategies they choose to employ upon enrollment (Paul & Kelleher, 1995). Some individuals will evaluate new situations as a challenge and some will evaluate the new situation as a threat, which can transpose to positive or negative expectations. If the individual perceives the new environment as a threat, the individual is likely to be concerned for what is being lost and thus will cope by denial or avoidance. If the stress is viewed as a challenge, the individual is likely to be concerned about what may be gained and thus will use more proactive coping strategies. Most students will agree that they experienced

stress entering their new college environment; however, anticipation attitudes may help predict a student's coping style prior to their arrival. Students who posses more proactive coping strategies should be more readily disposed to become involved and therefore more socially integrated into the community.

Students often behave according to their own prophecy (Cohn, 1992). Many incoming students do not identify or articulate their fears, but themes can be developed across fear of the unknown and a fear of failure (Cohn, 1992; Brawer, 1996). Higher levels of self-esteem increase students' tenacity to overcome those fears and in return increase their confidence. Bandura (1977) defines self-efficacy as "the conviction that one can successfully execute the behavior required to produce outcomes" (p.193). If students posses strong self-efficacy beliefs prior to their enrollment, one could reason that they would more readily overcome fears and seek new experiences. Bandura (1982) applied self-efficacy to social activism. He believes that persons with high self-efficacy will take action to correct their unhappiness or dissatisfaction with the status quo (Bandura, 1982). "Presumably, they are the ones who believe their own actions are likely to make a difference, and who therefore are willing to make the necessary effort and sacrifice, whereas those with low self-efficacy feel that the chances of success are not enough to be worth it" (Bandura as cited in Hill, 1997, p. 156). Students who are willing to seek new experiences should be more likely to become involved and, therefore, be more socially integrated.

Intimacy motivation is conceptualized as a recurrent preference for experiences of warm, close, and communicative interactions with others (McAdams & Vaillant, 1982). Evidence suggests a link between intimacy motivation and general well-being. McAdams

and Vaillant (1982) found that high intimacy motivation among men in their thirties positively predicted an index of overall psychosocial adjustment seventeen years later. The most robust relationships were between intimacy motivation and two measures pertaining to the quality of life, marital and job enjoyment. Significant negative relationships between intimacy motivation and psychiatric visits, days sick leave, and drug or alcohol misuse were also found. Intimacy motivation was associated with self-ratings of greater happiness and gratification in women, and lack of strain and less uncertainty in men (McAdams & Bryant, 1987). Individuals high in intimacy motivation may thus experience higher levels of emotional well-being than those low in intimacy motivation (Demakis & McAdams, 1994). While certainly not a direct application, intimacy motivation developed prior to college enrollment may be a factor affecting social integration. Social integration is primarily a state of emotional satisfaction. Since intimacy motivation has been found to be related to emotional well-being, it is believed that there is a relationship with social integration as well.

Pre-college introversion and extroversion characteristics may provide indicators of the student's ability to become involved and develop social structures in their new environment. Shyness or introversion can affect life in painful and limiting ways (Jones & Carpenter, 1986). This construct can work against a life full of deep satisfying relationships because of inhibiting the full and authentic expression of the self (Cutrona, 1982; Fromm, 1956; May, 1973). Because satisfying relationships can be construed to represent happiness (Fordyce, 1981), shy people may experience a happiness deficit, especially if their shyness becomes a chronic difficulty. Periodic introversion may be considered normal. Most people say they have been shy at one time or another.

Nevertheless, it may be detrimental to socialization, play activity, and personality development under certain conditions. Shyness is significantly related to diverse interpersonal limitations, such as diminished self-esteem, self-deprecatory judgments, loneliness, fewer intimate relationships, limited and dysfunctional social skills, and greater feelings of unimportance (Jones & Carpenter, 1986).

Extroversion refers to a stable personality trait or style associated with sociable, out-going and impulsive behavior and attitudes (McAdams & Bryant, 1987). Extroversion has been associated with general positive effects and significantly related to satisfaction with life. Extroverts typically use adjectives such as happy, joyful, pleased, enjoyment, and fun to describe their moods. While shyness may limit satisfaction (happiness) and limit a student's interaction abilities, extroversion may increase a student's interaction abilities. Introversion and extroversion characteristics are explored in relation to a student's potential for involvement and social integration.

The influences of pre-college involvement experiences should be examined when exploring the factors that impact social integration (Tomlinson-Clarke & Clarke, 1994). While Tomlinson-Clarke and Clarke's (1994) research has focused on women, the underlying theories may relate across genders. According to this study, non-academic variables associated with involvement were more predictive of social adjustment. Becoming involved may serve as a primary way of adapting to the new environment. Students possessing pre-college (high school) involvements and leadership experiences may be better equipped to become involved during college. Participation in college activities exposes students to social networks of achievement-oriented students, develops interpersonal skills, and increases the probability of persistence and goal achievement

(Pascarella & Terenzini, 1991). High school activities have been found to be positively related to institutional and goal commitments (Stage & Rushin,1993; Pascarella & Terrenzini, 1980; Tinto, 1975). Peters and Brown (1991) found that students with a high degree of high school involvements had significantly higher college self-efficacy beliefs. Past successes such as high school involvement and pre-college leadership experiences are believed to affect whether a student attempts to pursue further involvement in the college environment or not.

The pre-college domain of a friendship support construct is two-fold, both as a pre-college concern and the role of pre-college friends during the transition period. In the first case, pre-college concerns about losing existing relationships and making new friendships have been found to have a significant relationship to variables of self-esteem and the satisfaction of involvement in new college friendships ten weeks into the first semester of college (Paul & Kelleher, 1995). High pre-college concerns predicted greater reliance on pre-college relationships as primary resources. Secondly, Christie and Dinham (1991) explored pre-college friendships in relation to social integration. In their exploratory study, trends were found suggesting that access to high school friends (distance from home) and the college aspirations of those friends had significant effects on social integration. First-year students with easy access to their high school friends, especially when those friends were not also attending college, substantially restricted a student's involvement. First-year students with difficult access to their high school friends found imperatives to seek out new friendships through campus involvement. Interestingly, first-year students with the highest degree of social integration were students with easy access to their high school friends but whose friends were also

attending the same institution or at least involved in seeking higher education themselves. These friendships provided the highest level of support to become involved and seek out new situations (Christie & Dinham, 1991).

Persons generally display a natural tendency to explain events, particularly one's own bad experiences, in certain patterns defined as explanatory styles. Explanatory styles and patterns developed prior to college enrollment may provide indicators of the students coping strategies upon enrollment. Martin Seligman (1970) has suggested that the way a person interprets his or her failures and troubles can vary in three ways: internal or external, global or specific, and unstable or stable. By recognizing patterns among the three sets of factors, Seligman (1970) believed we could make predications about a person's behavior when he or she encountered stress, difficulty, or failure. Persons utilizing optimistic explanatory styles will be less likely to be seriously discouraged by setbacks and therefore more likely to go on working efficiently in spite of those setbacks than will people with pessimistic explanatory styles. The "optimists" would therefore be expected to get better grades in school, be less likely to drop out of school, and be more productive (Buchanan & Seligman, 1995).

Recently, Nora (2001) has proposed a Model of Student/Institution Engagement. Within this theoretical framework, Nora identifies all of the key components not only in Tinto's (1975, 1993) model of student integration but also integrates research by others in the literature. Nora's model of the mutual academic and social engagement of both the student and his or her respective institution was used to provide the underlying framework guiding the selection and testing of variables representing major factors found

to have an impact on student persistence. Within this context, several pre-college psychosocial factors were incorporated.

Methods

The design of this study incorporates a longitudinal panel survey where data was collected at three different points in time; the summer before their freshman year in college, late spring of their freshman year, and fall of their second year. The first phase included survey procedures and factor analysis that tested the reliability and validity of an instrument designed to define and test those pre-college psychosocial factors that affect a student's ability to become integrated into college. The second phase intended to develop a greater understanding of those factor's impact and relationship to current retention theory. This study garnered the data needed to fully analyze Nora et al.'s (1996, 2000) Student Adjustment Model.

The study was conducted at a small, special purpose, public undergraduate institution in the south. Using institutional records, the sample included the entire population of freshman-admitted students intending to enroll for the fall 1998 semester. Only first-time, degree-seeking freshman students between the ages of 18 and 22 were included. This study did not include transfer students, as the social integration processes moving between institutions may be substantially different. Approximately 250 students met the population description (See Table 1). Forty-six percent were male. Twelve percent were minorities (either African American or Hispanic). The mean SAT score was 1092 and the mean ACT score was 23.12. Sixteen percent were ranked in the top ten percent of their high school graduating class and 80% were ranked in the top half. The participant sample yielded 151 participants who chose to volunteer.

Pre-College Survey: Pre-college psychosocial variables incorporated in the initial survey instrument were developed based on related literature (e.g. Bandura, 1977, 1982; Christie & Dinham, 1991; Jones & Carpenter, 1986; McAdams & Vaillant, 1982; Nora & Cabrera; 1996; Paul & Kelleher, 1995; Seligman, 1970; Tomlinson-Clarke & Clarke, 1994). Items and scales were used to provide measures of perceptions of psychosocial attitudes, skills, and values believed to be related to integration and persistence. Constructs were measured using a four-point Likert scale ranging from (1) strongly disagree to (4) strongly agree and treated as interval data.

First Year Experience Survey: The Survey of First-Year Experiences was distributed during the late spring and summer following the freshman year. The survey gathered additional demographic information as well as data needed to test the Comprehensive Student Adjustment persistence model. The student survey consisted of items drawn or adapted from instruments developed by Bean and Associates (1982, 1990, 1985, 1990), Cabrera, Castaneda, Nora, and Hengstler (1992), Cabrera and Nora (1994, 1993), Nora (1987), Nora, Attinasi, and Matonak (1990) Nettles and associates (1986, 1988), Pascarella and Terenzini (1980), Tracey and Sedlacek (1987), that measured: perceptions of prejudice-discrimination, parental encouragement, academic experiences, social integration, academic and intellectual development, goal commitment, and institutional commitment. Selection of these items and scales were based on research documenting their validity and reliability.

Persistence: Persistence, the dependent variable for the study, is dichotomous in nature (1 = persist; 0 = non-persist). Enrollment records of all participants were checked

in the early fall 1999 semester. Students who re-enrolled for the Fall term by the 12th day of record (either full or part-time) were coded as persisters.

Data Analysis

The first stage consisted of an examination of the dimensionality of factors (or scales) reflected in the survey instrument. Through a principal component analysis, specific factors (or dimensions) were derived that either confirmed those constructs identified in the theoretical framework or established new dimensions as measured by items in the survey instrument. Appropriate eigenvalues (>1.0) and rotated factor loadings (>.5) were examined to provide evidence of the different dimensions captured by items in the survey. Scales derived from the factor structures identified were examined for internal consistency or reliability using Cronbach's Coefficient Alpha.

Logistic regression analysis was applied to the data in order to identify the factors that were relevant to the outcome measure of the study (persistence). In this study, an estimation of alternative models for the logistic regression followed a hierarchical stepwise process whereby blocks of variables were added in a sequential manner (to the base model) and the validity of the added block of variables was assessed as to its contribution in explaining the criterion (persistence) and improving the fit of the model (Cabrera, 1994). In each case, the two models were compared by computing the difference in their log-likelihoods (Tabachnick & Fidell, 1983). This difference was multiplied by two to create a statistic distributed as chi-square (Tabachnick & Fidell, 1983). Differences in the degrees of freedom for each model were calculated in order to evaluate the chi-square (Tabachnick & Fidell, 1983).

The core of the logistic regression model rests on the maximum likelihood function, usually referred to as G^2 (or scaled deviance). This statistic provides an overall indication of how well the estimates for the parameters in the model fit the data (Cabrera, 1994). The best fitting model would be the one that yields a significantly small G^2. The G^2 statistical test compares the differences in G^2 between two alternative models; reductions in G^2 figures with an associated p-value less than .05 indicate that the model accounted for a significant improvement of fit.

Several statistical indicators were used in assessing the goodness of fit of the model: summary statistics (X^2) for the overall fit of the model, *pseudo* "R^2", the G squared / degrees of freedom ratio and the proportion of cases correctly predicted by the model (PCP). The *pseudo* R^2 represents the proportion of error variance produced by an alternative model in relation to the base model. The ratio of the G^2 to its degrees of freedom provided an additional indicator of how well the model fit the data. A G^2 / degrees of freedom ratio less than 2.5 was interpreted as indicating a good fit. Tabachnick and Fidell (1983) explain that a large proportion of cases correctly predicted (PCP) would indicate that the model provides a good fit for the data. The PCP involved a comparison between the number of cases that the model predicted as being either 0 (non-persist) or 1 (persist) against the observed distribution of the sample size. Odds-ratio statistics were used to estimate the overall change in the dependent variable. The statistical significance of each variable in explaining persistence was determined by calculating the individual coefficient estimates and their corresponding standard errors for each variable within a block. In order to compare contributions made by each variable, beta weights were calculated for each variable. Odds-ratio statistics were used to

assess the marginal effect of each of the statistically significant corresponding variables on student persistence. Interpretation of the odds-ratio for continuous variables signified the change in probability on the outcome variable resulting from a unit increase on the independent variable. Variables from the blocks which are found not significant in improving the fit of the model and those variables in which the entire block are not found to improve the overall fit of the hypothesized model were not be included in the odds-ratio analysis.

Results

Six pre-college psychosocial constructs were hypothesized to affect a student's ability to become integrated into college and to subsequently influence his or her decision to remain enrolled in college or to withdraw. These constructs included anticipatory attitudes, self-efficacy, intimacy motivation, introversion and extroversion, leadership and involvements, friendship support, parental encouragement, and explanatory styles.

Phase One: Factor Analysis of Psychosocial Constructs

Principal Component Analysis identified eighteen factors with eigenvalues greater than 1.0. The factors explained between 47.13% and 69.5% of the overall variance for each construct. The remaining variance, the error or residual variance, accounts for the unreliability of the data-gathering process. Table 2 lists the factors with eigenvalues greater than 1.0 for each of the constructs and indicates the relative importance of each factor in accounting for the total variance associated with the set of items. For ease of understanding, all factors have been included in the summary table and each factor has been named. This phase also consisted of verifying the internal consistency or reliability

of the scales derived from the factor analysis and was measured by using Cronbach's Coefficient Alpha.

Phase Two: Factor Analysis of First Year Experience

An examination of the dimensionality of factors reflected in the Student/Institution Engagement Model (Nora, 2001) confirmed the theory discussed in the literature. As in Phase One, only eigenvalues greater than 1.0, factor loadings greater than .5, and coefficient alpha values equal to or greater than .6 are discussed for inclusion. Each construct hypothesized by the model was confirmed by the results and included in Table 3. Measurement scales for each construct explained between 64.26% to 86.52% of the variance. Although results confirmed each construct, greater dimensionality was found than was expected. Four constructs, *Perceptions of Prejudice*, *Academic Experiences*, *Social Experiences*, and *Academic Development*, were represented by multiple scales. For example, Perceptions of Prejudice consisted of four subscales: global discrimination, course discrimination, institutional discrimination, and personal discrimination. Very similar in pattern, Academic Experiences was comprised of four subscales: quality of faculty, non-classroom interactions, faculty mentoring, and informal interaction.

Phase Three: Logistic Regression

In this study, four indicators of fit were utilized including summary statistics (X^2) for the overall fit of the model, pseudo R^2, the G^2 / *degrees of freedom* ratio, and the cases correctly predicted by the model (PCP). In addition, the odds ratios for the exponentials associated with the regression coefficients were derived to estimate the overall likelihood

of predicting the dependent variable. Results are displayed in Table 4. In all cases, the results support the inclusion of the psychosocial constructs in the model.

The logistic regression followed a hierarchical stepwise process aligned with the theoretical model of student persistence developed by Nora (2001). For each of the seven steps, the X^2 was significant ($p < .001$) indicating an increased fit for each block added. Chi-squared values in sequential order were 123.182, 107.29, 94.443, 98.1385, 88.004, 94.306, and 110.891. The X^2 indicates the overall fit of the model. A significant X^2 indicates that the model is significantly improved by the addition of subsequent blocks of variables to the model.

Pseudo R^2 represents the proportion of error variance produced by an alternative model in relation to the base model. It is desirable to have a reduction in the G^2 value. In the current study, G^2 exhibited a reduction with each addition. In sequential order, G^2 decreased from 1299.59, 1279.88, 1165.85, 1147.09, 1120.20, and 1077.52, to 554.23.

The ratio of the G^2 to its degrees of freedom provided an indicator of how well the model fit the data. A G^2/df ratio less than 2.5 was interpreted as indicating a good fit (Cabrera, 1994). As with X^2 and G^2 measures, the G^2/degrees of freedom was well within the desired level for each of the blocks. In addition, the G^2/degrees of freedom ratio was reduced with the addition of each block. Values ranged from a high of 1.15 at block one to a low of 0.52 at block seven.

Tabachnick and Fidell (1996) explain that a large proportion of cases correctly predicted (PCP) would indicate the model provides a good fit for the data. The PCP involved a comparison between the number of cases that the model predicted as being either 0 (non-persist) or 1 (persist) against the observed distribution of the sample size.

As with the other measures of fit, the PCP produced positive results indicating the strength of the model. The PCP was increased for each block added. Most significantly, the Student Adjustment model without the introduction of the psychosocial constructs (block seven) produced a PCP of 79.31%. After introduction of the pre-college psychosocial constructs, the PCP increased to 90.80%.

On review, the results substantiate the theoretical model proposed by Nora (2001). Each construct was found significant in the logistic regression analysis. Without the introduction of the psychosocial factors, the theoretical model was able to predict nearly 80% of the persisters from non-persisters, however; inclusion of the psycho-social factors significantly enhances the predictive ability of the model to 91%. .

The Impact of Psychosocial Factors on Withdrawal Decisions

Student anticipation of an academic challenge as they enter college was positively related to persistence. Paul and Kelleher (1995) surmise that individuals who evaluate the "college" situation as a positive challenge may adapt more proactive coping strategies, subsequently affecting their likelihood to persist. Anticipation related to expected diversity of students and values while in college were also positively related to decisions to remain enrolled. Both decreases in student resiliency and enthusiasm lead to withdrawal. If a student experienced difficulty in overcoming mistakes during his or her high school years, they were more likely to withdraw. Likewise, if the student did not look forward to college and new challenges and was not excited about attending, they were more likely to withdraw.

Of the psychosocial constructs, a student's social self-efficacy had the most significant positive effect on persistence. Students who perceived themselves as being able to fit in, make new friends, accomplish their goals, and become involved were much more likely to decide to stay in college. With regard to academic self-efficacy, a similar relationship was found. Students who felt comfortable about "fitting in" on a college campus, confident that they could easily make new friends and become involved on campus, that they could accomplish their academic goals were extremely more likely to persist to the second year. In addition, a decrease in their pride relating to past academic and social achievements also indicated a greater likelihood to withdraw.

Intimacy motivation was conceptualized as a recurrent preference for experiences of warm, close, and communicative interactions with others (McAdams & Vaillant, 1982). College students that experienced such interactions during their high school years were more likely to not only have positive social experiences during their first years in college but were also more likely to persist.

Tomlinson-Clarke and Clarke (1994) proposed that becoming involved served as a primary means of adapting to a new environment and students possessing pre-college involvements and leadership experiences would be better equipped to make those adaptations at the college level. The results in this study support their premise. A lack of leadership and involvement at the high school level is linked to a likelihood of dropping out of college. Participation in college activities exposes students to social networks of achievement-oriented students, develops interpersonal skills, and increases the probability of goal achievement (Pascarella & Terenzini, 1991).

As expected, those college students that had a strong support system of friends in high school were found to remain enrolled in college. Those students who were not part of such a support system were more in danger of dropping out of college at the end of their first year.

Pre-college parental encouragement was also found to be positively related to persistence. Just as parental encouragement has been found to be significant during the college experience, it should be of little surprise that the importance of attending college and the emotional support to do so were being developed prior to the first enrollment. As the level of parental support increased, a student was more likely to persist to the sophomore year. Persisters were more likely to have parents who encouraged them to become involved on campus, supported their institutional decision, encouraged them to take risks and seek new experiences. Persisters were also more likely to have parents who valued education. Students agreed with such statements as my parents encourage me to get a degree, have always discussed the importance of education, have high expectations, believe I can succeed, encourage me to attend college, and would do anything to make sure I have the opportunity to go to college. Nora and Cabrera (1996) found that for both minority and non-minority students, strong family encouragement facilitated the student's transition into the academic and social realms of the institution, enhanced his or her commitment to attaining a college degree, enhanced a sense of belonging to an institution, and impacted persistence. These strong conclusions are further supported by the current findings.

Conclusions

Educators should not be totally surprised by the finding that skills and attitudes developed prior to enrollment in higher education have an impact on a student's transition to a college environment and a student's decision to remain enrolled in college or drop out. Previous studies (e.g., Cabrera, Nora, Hagedorn, Pascarella, & Terenzini, 1985, 1999; Nora & Cabrera, 1996) that incorporated pre-college factors as conceptualized by persistence theories have found them to influence a student's academic and social adjustment and his or her re-enrollment, albeit somewhat limited. These limited influences may be attributed to the misspecification in the conceptualization of those pre-college factors. This oversight, coupled with the results of recent studies (Cabrera, Nora, Hagedorn, Pascarella, & Terenzini, 1999; Nora & Cabrera, 1996) that establish the importance of parental support systems and past communities, makes it necessary to revisit the role of pre-college psychosocial factors within the persistence process. Development of appropriate intervention and support systems informed by the results may help to successfully nurture students through their first year in college and foster the skills necessary to become involved in the college process and persist to completion.

The results indicate four major areas for intervention by higher education institutions: mentoring services, faculty and staff development, student activities/residence hall programming, and counseling initiatives. Mentoring programs, staffed by both students and faculty, should develop strategies that focus on successfully engaging the student in positive social and academic experiences, alleviating fears that students might have with regard to their ability to succeed during their first year, and providing realistic feedback to students so that they can make informed decisions.

Coupled with these strategies are efforts by the institution to provide an early systematic approach at identifying students that are in need of counseling, either personal or academic. Anticipatory fears, unrealistic self-expectations and alienation are very real to students and a sense of isolation or not belonging has been found to negatively affect persistence (Cabrera & Nora, 1994; Nora & Cabrera, 1996). Counseling initiatives must be carefully planned by administrators, counselors, and faculty that not only address these issues but also are identified early on in a student's first year.

Faculty sensitivity and awareness of the negative impact of some psychosocial factors could be raised through faculty and staff development. That is not to say that faculty must assume the role of counselors. Rather, the intent of this professional development is to heighten the faculty's awareness of the validation of students in the classroom (Rendon, 1994), to enhance the degree and nature of their interaction with students, and to participate in the overall mentoring experience of students. Faculty participation in orientation programs and in social activities designed to bring faculty and students together is highly suggested. Collaborative learning experiences in the classroom have been found to enhance the interchange of values and attitudes among students and to affect the academic achievement of some students (Cabrera, Nora, Bernal, Terenzini, & Pascarella, 1998). Among those conversations and discussions engaged by students in those specific types of learning communities is the possibility of a student processing anticipatory issues as well as issues related to his or her self-efficacy.

As part of the institution's responsibility to also focus on these psychosocial factors, encouragement of active participation in student activities through a wide array of social activities and student governance structures will not only provide the means by

which students can engage in leadership roles but where social interaction among peers is an expected outcome. In this manner, issues related to shyness, fear of failure, and intimacy may be dispelled or, at a minimum, drawn out for discussion. Moreover, institutional efforts should attempt to provide a systematic approach at involving parents in different activities. The vast majority of the research on persistence, including the current study, has established the influence of parental support both prior to the students enrolling in college (e.g., Cabrera, Nora, & Castaneda, 1993; Nora, 1987; Nora & Cabrera, 1993 1996; Rendon, 1994).

Additional initiatives by higher education institutions might include building better bridges between secondary and post-secondary education systems. Both higher education and secondary administrators and counselors could play a key role in nurturing the psychosocial factors that facilitate student success at higher levels.

Concluding Remarks

There are those who believe that there has been a saturation of literature on persistence and that there is no further need for additional studies. While it is true that much is to be found in the literature focusing on this issue, dropout rates continue to haunt administrators and educators. Some increases in persistence rates can be identified across the country and sometimes among different units at a single institution. The truth is that there remains much more to be uncovered. Whether it is to be found in classroom activities, in instructional approaches, in the academic and social engagement of the student, or even in the area of pre-college psychosocial factors, research must address the question of why students forego their educational hopes and desires.

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Table 1. Demographic Characteristics

	Population		Sample	
Participants	249		151	
Male	115	46%	68	45%
Female	134	54%	83	55%
Caucasian	202	81%	128	85%
Texas Residents	164	66%	95	63%
Admission Status				
Top Ten %	37	15%	26	17%
Unconditional	194	78%	109	72%
Provisional	18	7%	16	11%
SAT Mean	1091.98		1089.4	
ACT Mean	23.12		23.56	
High School Rank				
First Quarter	107	43%	68	45%
Second Quarter	92	37%	48	32%
Top Half	199	80%	116	77%

Table 2. Pre-College Psychosocial Constructs

Construct	Factor	Item	Cronbach Alpha	Factor Loading
Anticipation Attitudes				
	Academic Challenge -		.685	
		Extra reading to prepare		.717
		Academic experiences will be enjoyable		.709
		Challenge of learning		.589
		Discussions to prepare		.508
	Diversity & Values		.664	
		Exposure to diversity is essential		.775
		Introduced to different values		.590
		Enjoy challenging my beliefs and values		.555
		Better understanding of my values and myself		.538
	Enthusiasm		.593	
		Looked forward to new challenges		.764
		Excited about new environment		.690
		Looked forward to college		.500
	Clarity of Expectations		.830	
		Clear understanding of social experiences		.901
		Clear understanding academic experiences		.897
	Resilience		.704	
		I can try again		.825

I can find someone to help me		.772
Self-Efficacy		
Competent to Meet Educational Goals	.733	
Able to succeed		.826
Qualified and capable as the other students		.806
Able to reach educational outcomes		.684
Definite goals for education		.543
Competent to Meet Social Goals	.758	
Ability to "Fit in"		.843
Become a campus leader		.761
Confident in decision to attend		.635
Ability to make new friends		.551
Accomplish goals		.509
Intimacy Motivation		
Value and Support of Friends	.662	
Trust essential for friendship		.762
Happiness comes from relationships		.672
Less vulnerable with a friend		.626
Relationships are critical for happiness		.524
True friendship depends on trust		.532
Introversion & Extroversion		
Shyness	.743	
Shyness inhibits making new friends		.768

Difficult to develop new friendships		.749
Nervousness effects ability to communicate		.700
Feel shy in new environments or situations		.692
Comfortable in groups of new people		.519
Leadership and Involvements		
Leadership and Involvement	.889	
Coordinated people and activities		.852
Organized major events in high school		.841
Motivated other students.		.817
Leader in the clubs and organizations		.810
Sought leadership positions		.783
Involve in high school extracurricular activities		.707
Involved in community or civic activities		.610
Friendship Support		
Support System of Past Friendships	.807	
Contact with friends at other colleges		.727
Contact friends during holidays		.725
Maintain relationships with high school friends		.725
Count on friends not in college		.689
Rely on old friends during stress		.647
Value of former high school friends		.599
Encouragement from Past Friendships	.763	
Friends will encourage me to stay in college		.881

	Friends encourage me to go to college	.854
Parental Influence		
	Support System of Parents	.865
	Time with my parents	.777
	Encourage to stay in college during stress	.746
	Rely on family during stress	.672
	Family contact during holidays	.655
	Parents support	.630
	Parents provide resources	.624
	Healthy and positive relationship with parent(s)	.576
	Parents Support New Experiences	.875
	Parents have encouraged new experiences	.831
	Parents support attending this institution	.816
	Parents encourage me to get involved	.739
	Parents Encourage and Value Education	.842
	Parents encouraged getting a college degree	.840
	Parents have discussed importance of education	.818
	Parents encourage me to attend college	.769
	Family has high expectations	.606
	Parents value opportunity to attend college	.555
Explanatory Styles		
	Internal	.782
	Success due to preparation	.835

	Temporary difficulty	.688
	Learning provides control	.609
	Success due to organization	.557
	Academic confidence	.535
	Temporary poor performance	.507
External	.653	
	External reasons for persisting	.789
	External reasons for academic performance	.746

Table 3: First Year Experience Constructs

Construct	Factor	Item	Cronbach Alpha
Encouragement			
	Parental Encouragement		.624
		Family approves of institution	
		Family encourages college attendance	
Perceptions of Prejudice			
	Global Discrimination		.865
		Observed discriminatory gestures-minorities	
		Observed discriminatory gestures-females	
		Heard negative words about women	
		Believe students prejudiced against minorities	
		Believe students prejudiced against women	
		Heard negative words about minorities	
	Course Discrimination		.926
		Course content reflects minority experiences	
		Course content reflects female experiences	
	Institutional Discrimination		.743
		Instructors treat genders the same	
		Sense concern for students of all races	
		Institution promotes differences	
		Instructors treat races the same	
		Personal Discrimination	
		Never been singled out due to race	
		Never been singled out due to gender	
Academic Experiences			
	Quality of Faculty		.878
		Faculty are superior teachers	
		Faculty spend time with students	
		Faculty interested in students	
	Non-Classroom Interactions		.865
		Interactions influence intellectual growth	
		Interactions influence personal growth	
		Interactions influence career goals & aspirations	

Faculty Mentoring	.834
Faculty support student growth	
Faculty interested in teaching	
Informal Interactions	.798
Developed relationship with faculty member	
Meet and interact with faculty	
Social Experiences	.888
Social Experiences on Campus	
Relationships impact personal growth	
Friendships are satisfying	
Personal relationships with other students	
Relationships impact intellectual growth	
Ability to make friends	
Social Enclaves	
Students will listen	
Most students have different values	
Academic Development	
Intellectual Development	.899
Interest to learn more	
Confidence to perform in college	
Critically analyze ideas and information	
Intellectual growth	
Ability to work in groups	
Scientific concepts	
Motivation to pursue ideas	
Quantitative concepts	
Communication Development	.814
Express ideas in writing	
Reading ability	
Express ideas orally	

Table 4: Effects of Psychosocial Constructs on Student Adjustment Persistence Model

Indicators of Overall Goodness of Fit	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Model 5*	*Model 6*	*Model 7*
X^2	123.182**	107.29 **	94.443 **	98.139 **	88.004 **	94.306 **	110.891 **
G²(scaled deviance)	1299.59	1279.88	1165.85	1147.09	1120.20	1077.52	554.23
G²/df ratio	1.15	1.14	1.04	1.02	1.00	0.98	0.52
PCP (Percent of cases correctly predicted by the model)	3.56%	3.56%	77.01%	77.01%	81.61%	79.31%	90.80%

Key for Significance: * $p < .05$ ** $p < .00$

Nora (2001) Student/Institution Engagement Model
Theoretical Framework